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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,086	12/02/2003	Tsung Jang Shi	C2P3010-92-082E	1748
7590 03/10/2005			EXAMINER	
TSUNG JANG SHI 235 Chung-Ho Box 8-24 Taipei, TAIWAN			NGUYEN, TU MINH	
			ART UNIT	PAPER NUMBER
			3748	
DATE MAILED: 03/10/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/725,086

Applicant(s)

SHI, TSUNG JANG

Examiner

Tu M. Nguyen

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 8-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. An Applicant's Amendment filed on December 27, 2004 has been entered. Claims 1-7 have been canceled. Claims 8-14 have been added and are pending in this application.

#### ***Drawings***

2. The formal drawings filed on December 27, 2004 are objected to because in Figure 1, "PRIPR" should read --PRIOR--. Correction is required.

#### ***Claim Objections***

3. Claim 1 is objected to because on line 16 of the claim, --and-- should be inserted following "head;". Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8-10, 12, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaufmann, Jr. (U.S. Patent 3,657,878) in view of Tsukui et al. (U.S. Patent 6,234,124).

Re claim 8, as shown in Figures 1 and 7, Kaufmann, Jr. discloses an engine with an auxiliary airflow booster, comprising:

- an exhausting head (12);
- an exhausting tube (14) connected to the exhausting head (12); and
- an auxiliary airflow booster (120) installed to the exhausting tube (14) at an exhausting gate of the exhausting head (12), the auxiliary airflow booster being a hollow body (120); an inner wall of the auxiliary airflow booster being formed with a narrowing portion (134) which comprises two opposite tapered surfaces so as to have a front via hole (148) and a rear via hole (138); the front via hole (148) has a front tapered portion (144) and the rear via hole (138) has a rear tapered portion (146); an inner diameter of the front via hole (148) being smaller than the inner diameter of the rear via hole (138) (as clearly shown in Figure 7); namely, the narrow portions of the front tapered portion and rear tapered portion are connected; since the inner diameter of the rear via hole (138) being larger than the inner diameter of the front via hole (149), the rear via hole expanding the diameter of the body; by above structure, the exhausting speed of waste gas is increased so that more fresh air is sucked into the cylinder.

The engine in Kaufmann, Jr. has other structures such as at least a combustion chamber, an intake sub-system, and an exhaust sub-system so that a mixture of intake air and fuel is combusted in the combustion chamber to generate the work needed to propel a vehicle. The resulted exhaust gas from the combustion of mixture is then released to the environment through the exhaust tube of the exhaust sub-system.

Kaufmann, Jr., however, fails to disclose the detailed structures of the combustion chamber, intake sub-system, and exhaust sub-system.

As shown in Figure 1, Tsukui et al. teach that a typical structure of an internal combustion engine comprising a cylinder having a combustion chamber (5), a piston (line 30 of column 3) installed in the combustion chamber, an air inlet head (18) having an air inlet gate being formed at an upper inlet side of the piston, the air inlet head assembled with an air inlet tube (9) for inputting fresh air into the cylinder, the air inlet gate being assembled with an air inlet (12b), a spring (20d), and a camshaft (7), an exhausting head (19) having an exhausting gate and being formed at an upper outlet side of the piston, an exhausting tube being assembled to the exhausting head for exhausting combustion gas, the exhausting gate being assembled with an air output gate, a spring (15), and a camshaft (8), wherein input air is mixed with fuel in the combustion chamber and then burns, the air inlet gate is opened, and the air outlet gate is closed; when waste gas is exhausted, the air inlet gate is closed and the exhausting gate is opened. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the airflow booster disclosed by Kaufmann, Jr. in the engine of Tsukui et al., since the use thereof would have improved the performance of the engine in Tsukui et al.

Re claim 9, in the engine of Kaufmann, Jr., the length of the front tapered portion (144) of the front via hole (148) is shorter than that of the rear tapered portion (146) of the rear via hole (138).

Re claim 10, in the engine of Kaufmann, Jr., the material of the body is selected from one of metals and ceramics (which is inherent due to the high temperature of exhaust gas).

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Re claim 12, in the engine of Kaufmann, Jr., a locking sheet or flange ((20) in Figure 1) is formed at a front end of the body for locking the exhausting head at the exhausting gate of the cylinder, and a rear end thereof is installed with a connecting section for engaging the exhausting tube (14).

Re claim 14, in the engine of Kaufmann, Jr., at least one body (120) is installed in the exhausting tube.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaufmann, Jr., in view of Tsukui et al. as applied to claim 8 above, and further in view of Gregorich et al. (U.S. Patent 4,690,245).

The engine of Kaufmann, Jr. discloses the invention as cited above, however, fails to disclose that an auxiliary cover covers the periphery of the body.

As shown in Figure 4a, Gregorich et al. teach an auxiliary airflow booster comprising an auxiliary cover (shaded region on the outside) for covering the periphery of the airflow booster. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the auxiliary cover taught by Gregorich et al. to cover the periphery of the airflow booster in Kaufmann, Jr., since the use thereof would have had the clear and obvious benefit of providing a thermal insulation or an oxidizing protected layer for the airflow booster.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaufmann, Jr. in view of Tsukui et al. as applied to claim 8 above, and further in view of Morita (Japan Publication 06-185340).

The engine of Kaufmann, Jr. discloses the invention as cited above, however, fails to disclose that an inner wall of the exhausting gate of the exhausting head of a cylinder is formed with a narrowing portion which comprises two opposite tapered surfaces so as to have a front via hole and a rear via hole; the front via hole has a front tapered portion and the rear via hole has a rear tapered portion.

As shown in Figure 2, Morita discloses an exhaust emission control device for an engine, comprising a venturi chamber (2) formed integrally with a cylinder head (1), the inner wall of the cylinder head of is formed with a narrowing portion which comprises two opposite tapered surfaces so as to have a front via hole and a rear via hole; the front via hole has a front tapered portion and the rear via hole has a rear tapered portion, as clearly shown in Figure 1. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have formed the airflow booster of Kaufmann, Jr. integrally with a cylinder head as taught by Morita, since the application thereof would have reduced the size of the exhaust gas system.

### ***Response to Arguments***

8. Applicant's arguments with respect to the references applied in the previous Office Action have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office Action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

***Prior Art***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of one patent: Rothman et al. (U.S. Patent 5,123,501) further discloses a state of the art.



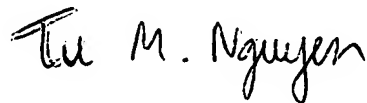
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***Communication***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tu Nguyen whose telephone number is (571) 272-4862.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas E. Denion, can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



TMN

Tu M. Nguyen

March 7, 2005

Primary Examiner

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